

**OPTICAL APERTURE FOR DATA RECORDING HAVING TRANSMISSION
ENHANCED BY WAVEGUIDE MODE RESONANCE**

Abstract

Electromagnetic radiation from an optical source is directed onto an optical aperture in a
5 metallic structure. The metallic structure in turn emits optical output from an emission region in
the structure and onto a recording medium (e.g., a magnetic recording disk), thereby heating the
medium. The optical output is enhanced when the electromagnetic radiation from the optical
source includes a frequency that matches a waveguide mode resonance in the metallic structure.
Features (such as ridges or trenches) in the metallic structure may be used to further increase the
10 emitted optical output beyond what the emitted optical output would be in the absence of these
features. The apparatus and associated method are useful for data recording, e.g., thermally
assisted data recording.

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